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(54) Handle device for opening doors

(57) It has a round plate (2, 22) provided with a rotation recovery mechanism (4, 28), with a shaft (3, 26), connectable to bolting means and to a handle (1, 14) whose operation causes the rotation of the shaft (3, 26). The handle (1, 14) is a part independent from the round plate (2, 22) provided with a housing (12, 31) that receives

a projection (5, 13) of the round plate (2, 22). This projection (5, 23) is integral to the rotation recovery mechanism (4, 28) and the cited projection (5, 23) has a cavity (13, 32) wherein the cited shaft (3, 26) is housed. Fastening means are included between said projection, shaft (3, 26) and handle (1, 14).

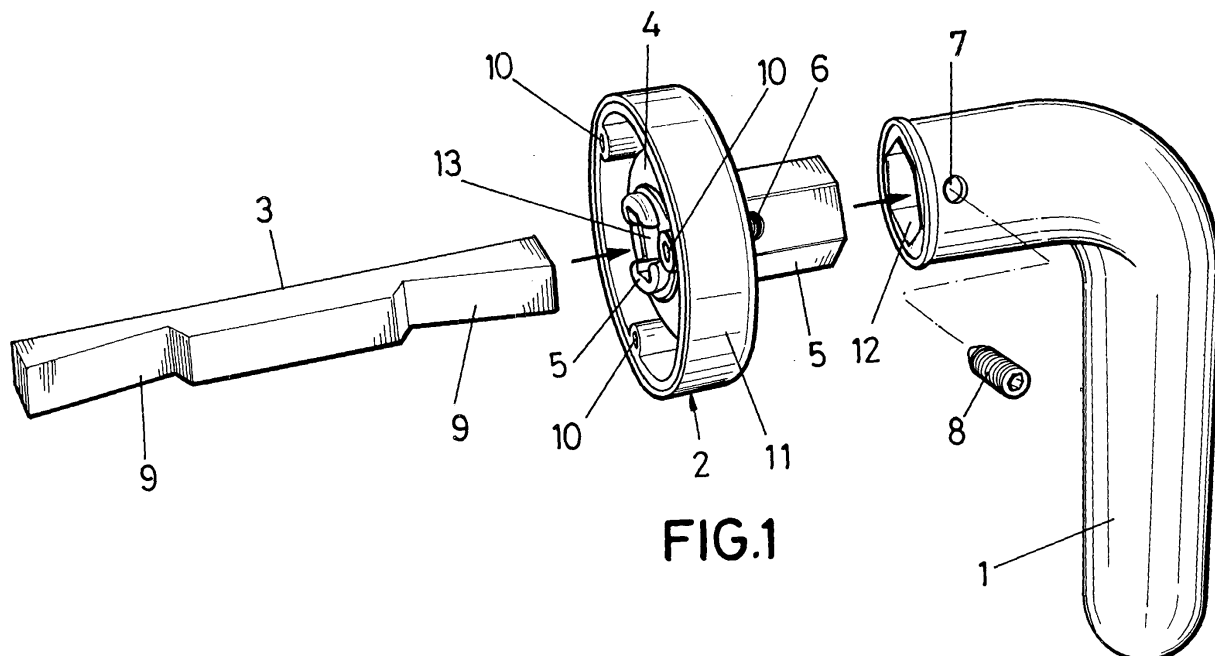


FIG.1

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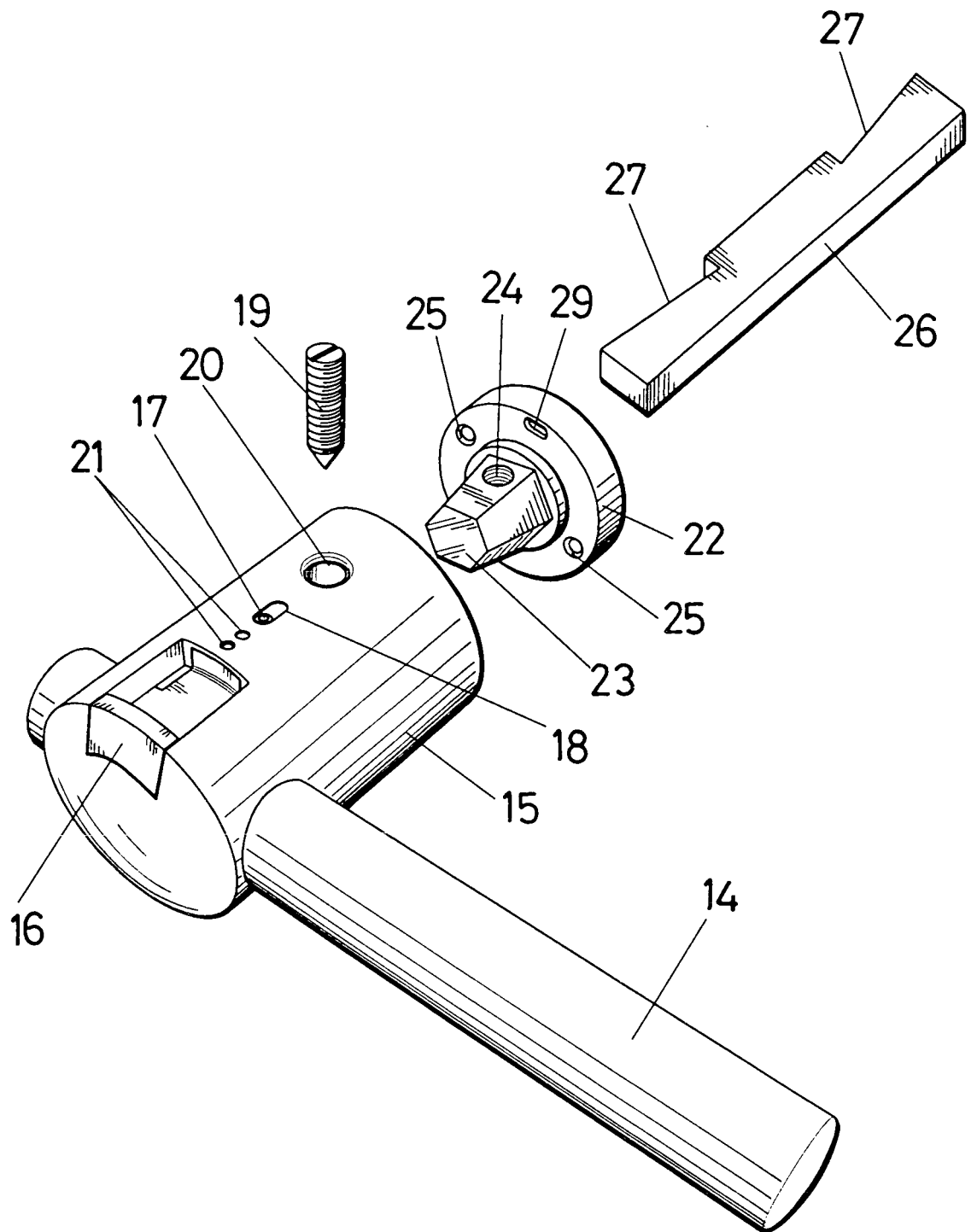


FIG.3

Description

OBJECT OF THE INVENTION

[0001] As expressed in the title of this specification, the present invention refers to a handle device for opening doors whose essential purpose is to provide a handle device wherein the handle is independent from the round plate so that the components of the handle device can be marketed in a small package. Furthermore, another purpose of the invention consists of said handle being able to be assembled and fastened to the corresponding round plate in a simple and rapid manner.

BACKGROUND OF THE INVENTION

[0002] Handle devices for opening doors that include a round plate with the corresponding rotation recovery device, with a shaft connectable to bolting means and a handle whose operation causes the rotation of said shaft, are known. These known handle devices have the drawback that the round plate and handle form a single body, with which the size of the handle device proves to be too big, and therefore, the package for marketing the product likewise proves to be big.

DESCRIPTION OF THE INVENTION

[0003] In order to obtain the above-cited objectives, the invention consists of a handle device for opening doors that has a round plate provided with a rotation recovery mechanism, with a shaft connectable to bolting means and a handle whose operation causes the rotation of the shaft.

[0004] In a novel manner, according to the invention, the handle is an independent part from the round plate provided with a housing that receives a projection of the round plate. This round plate is integral to the rotation recovery mechanism and the cited projection has a cavity wherein the cited shaft is housed. There are fastening means between said projection, shaft and handle.

[0005] According to the two embodiments of the invention, the cited fastening means consist of a threaded hole of the projection communicated with the cited cavity, in a hole of the handle communicated with the cited housing and in a recess of the shaft, in such a manner that when a screw is inserted into the hole of the handle and it is screwed into the hole of the projection, the recess of the shaft is pressed and the handle, projection and shaft remain fastened.

[0006] In one of the embodiments of the invention, specifically the one shown secondly in a following section, the handle includes an enveloping element arranged coaxially with respect to the rotation shaft and under which there is a locking handle whose actuator projects outward through said enveloping part, in such a way that when this actuator moves in a direction parallel to that of the cited rotation shaft, an appendix of the locking handle

penetrates or projects from (depending on the direction of movement) from a housing of the round plate, which causes the locking or unlocking, respectively, of the rotation of the handle.

[0007] Besides, in said second embodiment of the invention, the cited locking handle includes a stopping device defined by a spring of this locking handle that goes along a groove of the above-cited enveloping part in the movements of the locking handle, in such a way that the stopping of the spring against one end or the other of the edge of the cited groove, defines the limits of the end positions of said locking handle.

[0008] On the other hand, in the cited second embodiment of the invention, the locking handle includes a position stabilizer consisting of a small sphere with a spring that is locked in one hole or the other of two holes of the enveloping part when the end positions of the locking handle are reached.

[0009] With the structure that has been described, the invention has the advantages that make it possible to market the handle device with its components separated from each other, in such a way that the size required of the corresponding package is much smaller than that of conventional handle devices. Besides, the assembly of the components of the handle device of the invention is done very easily and rapidly, since once the round plate is fastened to the corresponding door, it suffices to couple the shaft to the rear part of said round plate and the handle to the front part thereof. All the parts are fastened by simple screw. Besides, one of the embodiments of the invention has a very secure and efficient locking handle, whose structure prevents the easy wear and tear of the parts of the handle device. This enables the invention to be applicable to handle devices with a locking handle, as well as to handle devices without the cited handle.

[0010] Hereinafter in order to provide a better understanding of this specification and forming an integral part thereof, some figures wherein the object of the invention has been represented in an illustrative and non-restrictive manner are attached hereto.

BRIEF DESCRIPTION OF THE FIGURES

[0011]

Figure 1 represents a perspective and exploded view of a handle device for opening doors, according to a first embodiment of the invention.

Figure 2 represents a perspective view of the handle device, which refers to the preceding figure 1, but with its components assembled.

Figure 3 represents a perspective and exploded view of a handle device for opening doors, according to a second embodiment of the present invention and the corresponding locking handle is in the unlocking position of the rotation.

Figure 4 represents another perspective exploded view of the handle device, which refers to the pre-

ceding figure 2, but from another point of view and with the locking handle in the locking position of the rotation.

Figure 5 represents a perspective view of the handle device of preceding figures 3 and 4, similar to figure 4, but with all the components assembled.

DESCRIPTION OF ONE OR SEVERAL EMBODIMENTS OF THE INVENTION

[0012] Hereinafter a description will be made of two embodiments of the invention making reference to the numbers used in the figures.

[0013] Hence, the handle device for opening doors of the first embodiment has a round plate (2) that includes a rotation recovery mechanism (4) and means (10) for fastening to the corresponding door. These means consist of some holes (10) for placement of the corresponding screws whose view is hidden by an ornamental crown (11).

[0014] The round plate (2) is independent from the handle (1), just as one can see in figure 1.

[0015] In order to connect to the round plate, the handle (1) has a housing (12), which permits a projection (5) of the round plate (2) to be received therein. In this embodiment, the shape of the housing (12) and the projection (5) has a hexagonal section, although in other embodiments, said shape could vary.

[0016] The projection (5) is integral to the rotation recovery mechanism (4) and also includes a cavity (13) for housing the shaft (3), just as one can see in figure 1. In this first embodiment, shown in figures 1 and 2, the cavity (13) and the shaft (3) have a shape with a quadrangular section, although in other embodiments this shape may vary.

[0017] In order to connect the shaft (3) to the round plate (2) and the latter to the handle (1) some fastening means consisting of a threaded hole (6) of the projection (5) that is communicated with the cavity (13), in a hole (7) of the handle (1) that is communicated with the housing (12), and in some recesses (9) of the ends of the shaft (3), have been provided for. Hence, upon inserting the shaft (3) in the cavity (13) and upon inserting the projection (5) in the housing (12), making holes (6) and (7) coincide, it suffices to insert a screw (8) through hole (7), screwing it into the hole (6) and pressing against the recess (9) of the shaft (3) so that the components (1), (2) and (3) remain fastened, just as it is shown in figure 2.

[0018] The second embodiment of the invention is shown in figures 3 to 5, wherein one can see that this second embodiment has a round plate (22) that includes a rotation recovery mechanism (28), also having a shaft (26) provided with some recesses (27) and a handle (14) for the corresponding grasping and operating of the handle. The operating of this handle (14) causes the rotation of the shaft (26).

[0019] The handle (14) has a part independent from the round plate (22) and that has a housing (31) that

receives a projection (23) of the round plate (22), thus the housing (31) as well as the projection (23) having a hexagonal shape.

[0020] The projection (23) is integral to the rotation recovery mechanism (28) and also has a cavity (32) wherein the cited shaft (26) is housed.

[0021] Some fastening means have been provided for this second embodiment, means which are comprised of a screw (19), a hole (20) that exists in the enveloping part (15) of the handle (14) and a hole (24) of the projection (23) of the round plate (22), in such a way that upon inserting the projection (23) in the housing (31) and also inserting the shaft (26) in the cavity (32), the components are arranged so that when the screw (19) is inserted through the hole (20) and it is screwed into the hole (24), all the components (14), (22) and (26) are fastened, since the projection (23) remains fastened inside the housing (31) upon being grasped by the screw (19), and the shaft (26) is fastened inside the cavity (32) of the projection (23) as the screw is fastened to the corresponding recess (27) of said shaft (26).

[0022] On the other hand, in this second embodiment, the round plate (22) has the corresponding holes (25) for fastening to a door by means of conventional screws.

[0023] Besides, the handle (14) includes an enveloping part (15) that is placed coaxially with respect to the rotation shaft and under which a locking handle is located, the actuator (16) of said locking handle projecting out through the enveloping part (15). Hence, when the actuator (16) moves in a direction parallel to that of the cited rotation shaft, an appendix (30) of the locking handle penetrates in a housing (29) of the round plate (22), which defines the blocking position of the locking handle. Logically, when actuating the actuator (16) in the opposite direction, the appendix (30) comes out of the housing (29), thus obtaining the unlocking position of the rotation of the locking handle.

[0024] In this second embodiment, the locking handle has a stopping device that is defined by a projection (17) of the locking handle itself, this projection (17) going along a groove (18) of the enveloping part (15) during movements of the locking handle, in such a way that the stopping of the projection (17) against the corresponding edge of the groove (18) will define the limit of the corresponding end position of the locking handle.

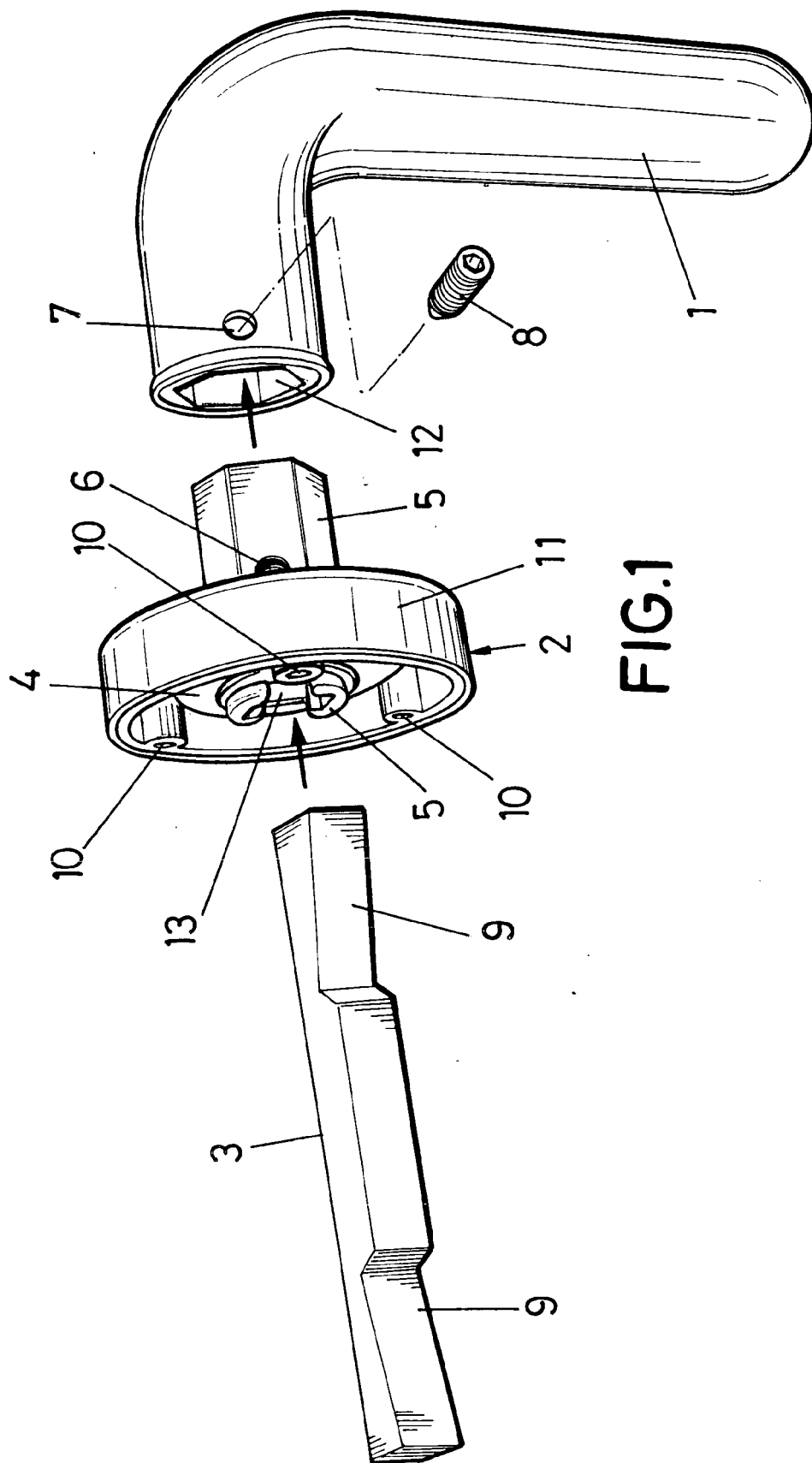
[0025] Besides, in this second embodiment, a position stabilizer (21) for the locking handle has been provided for. This stabilizer consists of a small sphere with a spring that locks in either of the two corresponding holes of the enveloping part (15) when the end positions of the locking handle are reached.

[0026] In other embodiments of the invention, it will be possible to do without the stopping device defined by parts (17) and (18) and the position stabilizer (21), or else they may have a different shape.

Claims

1. Handle device for opening doors, that has a round plate (2, 22) provided with a rotation recovery mechanism (4, 28), a shaft (3, 26) connectable to bolting means and to a handle (1, 14) whose operation causes rotation of the shaft (3, 26), **characterized in that** the handle (1, 14) is a part independent from the round plate (2, 22) provided with a housing (12, 31) that receives a projection (5, 23) of the round plate (2, 22), this projection (5, 23) being integral to the rotation recovery mechanism (4, 28) and the cited projection (5, 23) having a cavity (13, 32) wherein the cited shaft (3, 26) is housed; there being fastening means between said projection (5, 23), shaft (3, 26) and handle (1, 14). 5 10 15
2. Handle device for opening doors, according to claim 1, **characterized in that** said fastening means consist of a threaded hole (6, 24) of the projection (5, 23) communicated with the cited cavity (13, 32), in a hole (7, 20) of the handle (1, 14) communicated with the cited housing (12, 31) and in a recess (9, 27) of the shaft (3, 26), in such a way that upon inserting a screw (8, 19) in the hole (7, 20) of the handle (1, 14) and threading it in the hole (6, 24) of the projection (5, 23) the recess (9, 27) of the shaft (3, 26) is pressed, the handle (1, 14), the projection (5, 23) and the shaft (3, 26) being fastened. 20 25 30
3. Handle device for opening doors, according to claim 1, **characterized in that** the handle (14) includes an enveloping part (15) arranged coaxially to the rotation shaft and under which a locking handle is located, the actuator (16) of said locking handle projecting out through said enveloping part (15) in such a way that when this actuator (16) moves in a direction parallel to that of the cited rotation shaft, an appendix (30) of the locking handle penetrates or projects (depending on the direction of movement) from a housing (29) of the round plate (22), which causes the locking or unlocking respectively of the rotation of the handle (14). 35 40
4. Handle device for opening door, according to claim 3, **characterized in that** said locking handle includes a stopping device defined by a projection (17) of this locking handle that goes along a groove (18) of the enveloping part (15) in the movements of the locking handle, in such a way that the stopping of the spring against one end or the other of the edge of the groove (18) defines the limits of the end positions of said locking handle. 45 50
5. Handle device for opening doors, according to claim 3, **characterized in that** said locking handle includes a position stabilizer (21) consisting of a small sphere with a spring that locks in one hole or the 55

other of two holes of the enveloping part (15) when the end positions of the locking handle have been reached.



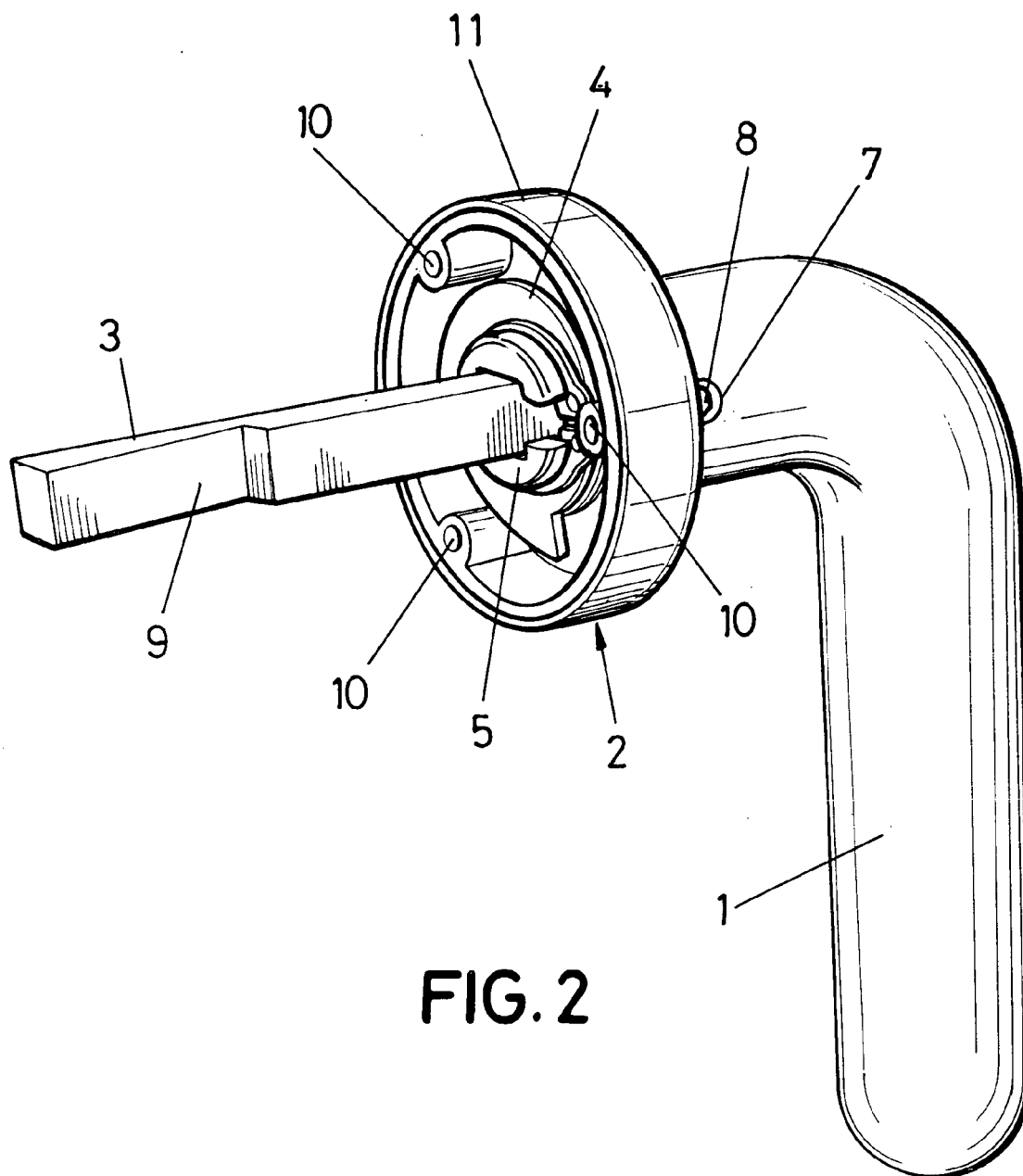


FIG. 2

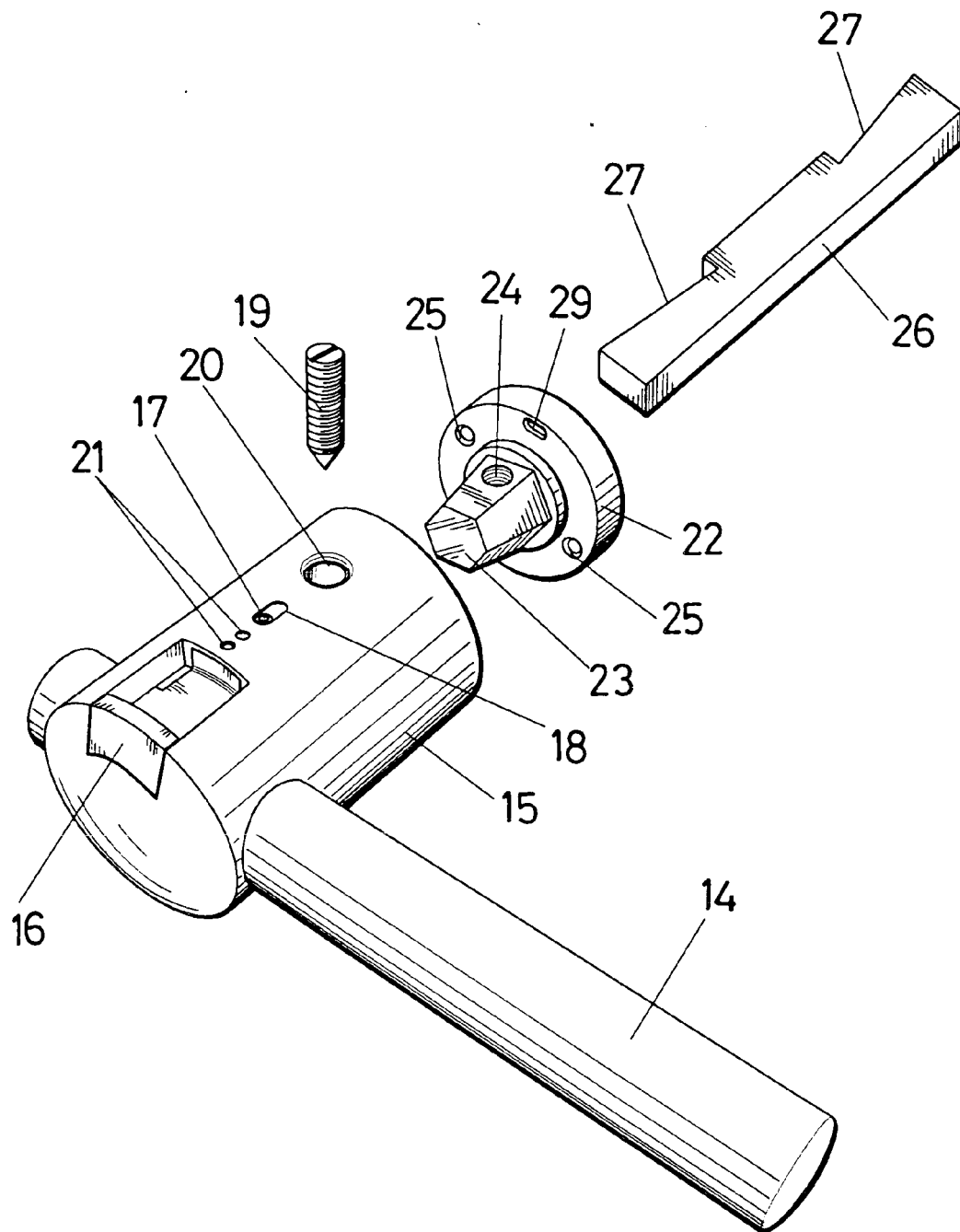


FIG.3

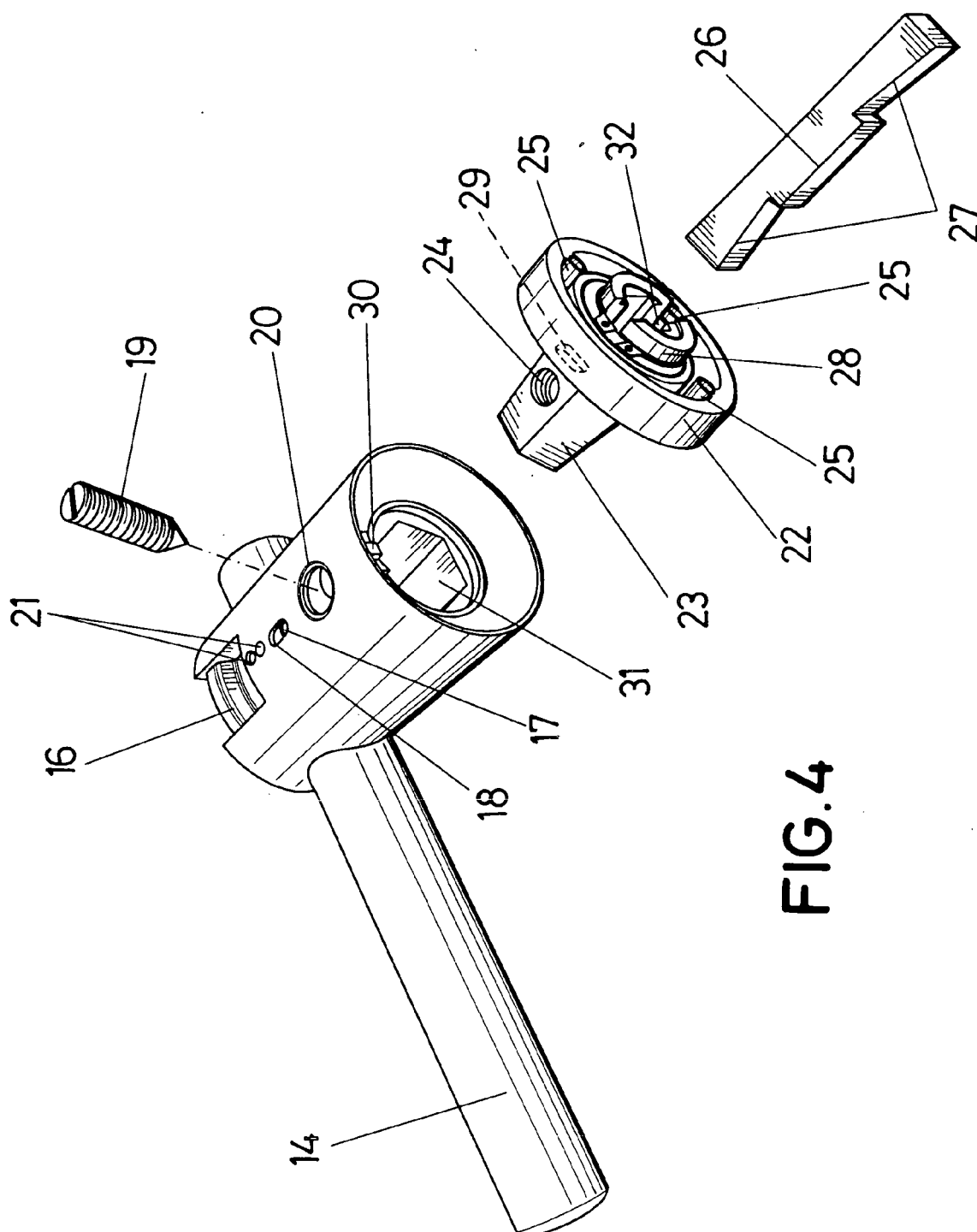


FIG.4

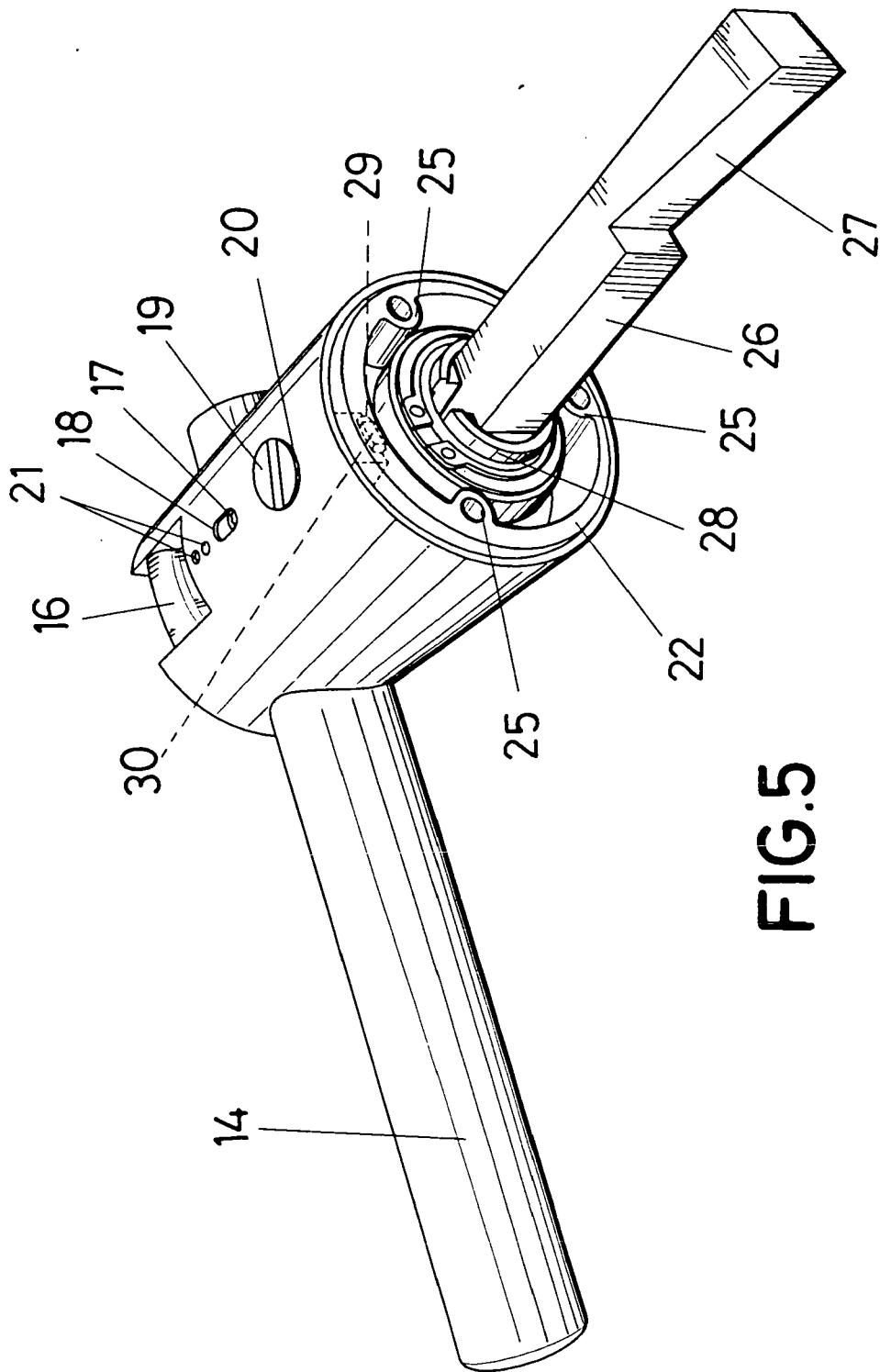


FIG.5